

REMARKS

Reconsideration of this application is requested. This Amendment is being submitted in light of the Office Action dated October 31, 2007 and an Advisory Action dated January 24, 2008.

Claims 1-14, 17-25 and 29 remain in the application. Claims 30-33 have been withdrawn from consideration. Claims 1 and 17 have been amended to clarify the operation of the controllable segment of the display to serially transmit status and parking-related data from the parking apparatus. Support for these claim amendments can be found on page 4, line 11-page 5, line 5; page 9, line 2-page 10, line 11; page 12, lines 4-23; and FIG. 1. Claim 29 has been amended to correct its dependency to claim 17. Therefore, it is respectfully submitted no new matter has been added by these claim amendments.

Claim 29 was rejected under 35 USC 112, second paragraph as being indefinite. Claim 29 depended from canceled claim 28.

Claim 29 has been amended to depend from claim 17 and the term receive has been amended to transceiver to be consistent with claim 17. It is respectfully submitted that the rejection to claim 29 should be withdrawn.

Claims 1-2 and 13 were rejected under 35 USC 103(a) as being unpatentable over Huang (US Patent 4,847,776) in view of Ferguson (US Patent 6,184,969) as set forth on pages 3-4 of the Office Action. Claims 3-12 and 14 were rejected under 35 USC 103(a) as being unpatentable over Huang (US Patent 4,847,776) in view of Ferguson (US Patent 6,184,969) and in further view of Jacobs (US Patent

6,195,015 B1) as set forth on pages 5-8. Claims 17-25 and 29 were rejected under 35 USC 103(a) as being unpatentable over Huang (US Patent 4,847,776) in view of Ferguson (US Patent 6,184,969) and in further view of Jacobs (US Patent 6,195,015 B1) as set forth on pages 8-13.

Amended claim 1 is directed to an electronic apparatus for use in a parking system including, inter alia, "a housing; a microcomputer disposed within said housing, said microcomputer further comprising at least one memory for storing parking parameters and credits; a time monitoring crystal electrically coupled to said microcomputer to generate accurate timekeeping, wherein the microcomputer debits the stored credits based on the stored parking parameters and time; a display means electrically coupled to and controlled by said microcomputer, said display means externally located on a face of said housing, wherein said display means includes a controllable segment configured to allow light to pass through said display means when the controllable segment is off and blocks light from passing through said display means when the controllable segment is on; a corner cube disposed behind the controllable segment of said display means configured to reflect light back to a source external of the apparatus when the controllable segment is off, wherein upon light being directed at said corner cube, the controllable segment is turned on and off by said microcomputer to serially transmit status and parking-related data from said apparatus; at least one momentary switch for operating said apparatus; and a battery to power to said apparatus" (Emphasis added). The apparatus of amended claim 1 serially transmits data from the apparatus by turning the controllable segment of the display on and off (see page 25, lines 3-17 of the instant application). Advantageously, the apparatus of amended claim 1 results in low power consumption, low implementation cost

and covert transmission. As stated on page 25, line 18-page 26 line 7 of the instant application:

The advantages of this passive transmitter for the in-car parking meters are very low power consumption, low implementation cost and covert, at a distance transmission. Since the passive transmitter needs only to modulate a LCD segment, power consumption for the transmission of serial data requires a only a few microwatts of power making it very suitable for in-car parking meters that operate off of a small Lithium battery for several years. The low implementation cost derives from use of the same LCD for both light modulation and display of human readable information. Additionally, since the modulated light is only returned directly back to the receiver and looks to the motorists as just another LCD segment, the passive transmitter provides a very covert communications channel that can work from several feet away. This allows parking enforcement officers to utilize an external receiver to read additional information about the status of the in-car parking meter not displayed on the LCD in human readable form. This information may contain the serial number, time parked, money in the electronic bank, etc; too much information to put on the display in human readable form as well as information that it would be desirable to limit public access to.

In regards to claim 1, The Examiner asserted Huang “fails to explicitly teach an LCD screen: wherein said display means includes a controllable segment configured to allow light to pass through said display means when the controllable segment is off and blocks light when from passing through said display means when the controllable segment is on; and further a corner cube to reflect light back to a source external of the apparatus when the controllable segment is off, wherein upon light being directed at said corner cube, the controllable segment is turned on and off to passively transmit data from said apparatus”. The Examiner then asserted “Ferguson discloses that reflective-type LCD screens are old and well known in the art...Moreover, Ferguson also discloses that it is also old and well known to use corner cubes as the reflective material of such a system.

As a result, all of the components parts are known in Huang and Fergason. The only difference is the combination of the "old elements" into a single device by mounting them on a single chassis. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the combination of Huang with the teachings of Fergason to include a reflective-type LCD screen for a system that requires some type of transmission through an LCD".

It is respectfully noted that Huang is directed to a microprocessor parking meter internally held in a car. At best, Huang only discloses an LED display having no segments to allow light to pass through and data transmission via a wire 53 to another meter. Huang does not specifically disclose an LCD type of display.

To overcome the deficiencies of Huang, the Examiner provides Fergason to show LCD display are known. Fergason is directed to a passive dithering display system including an optical display having a plurality of pixels with optical dead space between the pixels for producing an image, and a birefringent material for shifting one polarization component of the image relative to a second polarization component of the image such that the shifted polarization component lies in the dead space. The Examiner has combined the references since Huang discloses a display in a parking meter and Fergason discloses an LCD display as an exemplary display which may used a corner cube as a retro-reflector. However, there is no suggestion in Huang to look to LCD displays or to employ the display as a means for transmitting data. "It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion in the prior art, to combine the elements." *Arkie Lures, Inc. v Gene Larew Tackle, Inc.*, 119 F.3d 953, 957 (Fed. Cir. 1997). The fact that references can

be modified or combined is insufficient to meet this criterion. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998); *In re Mills*, 916 F.2d 680, 682 (Fed. Cir. 1990). Moreover, the fact that the modifications or combination would be well within the ordinary skill in the art, by itself, is insufficient to meet this criterion. *Al-Site Corp. v. VSI Intern., Inc.*, 174 F. 3d 1308, 1324 (Fed. Cir. 1999); *Ex parte Levengood*, 28 U.S.P.Q.2d 1300, 1302 (Bd. Pat. App & Inter. 1993).

Moreover, even assuming the references are combined/modified as suggested by the Examiner, the combination/modification still does not teach the claimed invention of amended claim 1. While Fergason discloses reflective-type LCD screens and corner reflectors in LCD screens, Fergason does not cure the deficiencies of Huang. No where in Fergason is it disclosed that the LCD display include “a controllable segment” and “a corner cube disposed behind the controllable segment of said display means configured to reflect light back to a source external of the apparatus when the controllable segment is off, wherein upon light being directed at said corner cube, the controllable segment is turned on and off by said microcomputer to serially transmit status and parking-related data from said apparatus” as recited in amended claim 1. Essentially, the controllable segment and corner cube transmit data by allowing the corner cube to reflect light in a serial manner through the display means by modulating, i.e., turning on and off, the controllable segment. Neither Huang nor Fergason, alone or in any combination, discloses “a controllable segment configured to allow light to pass through said display means when the controllable segment is off and blocks light from passing through said display means when the controllable segment is on; a corner cube disposed behind the controllable segment of said display means configured to reflect light back to a source external of the

apparatus when the controllable segment is off, wherein upon light being directed at said corner cube, ***the controllable segment is turned on and off by said microcomputer to serially transmit status and parking-related data from said apparatus***” as recited in amended claim 1. The combination of Huang and Ferguson does not teach the “controllable segment” and the functionality it imparts to the apparatus of amended claim 1 and, therefore, does not teach all the limitations of claim 1. All claim limitations are significant, and must be given weight and effect vis-à-vis the patentability of the claims. *Application of Saether*, 492 F.2d 849,852 (C.C.P.A. 1974). If even a single claim limitation is not taught or suggested by the prior art, then that claim cannot be obvious over the prior art. *Application of Glass*, 472 F.2d 1388, 1392 (C.C.P.A. 1973).

Therefore, it is respectfully submitted claim 1 is patentably distinct and not rendered obvious by Huang and Ferguson, alone or in any combination. It is respectfully submitted that dependent claims 2-14, depending directly or indirectly from amended claim 1, are patentable for at least the reasons stated above in regard to claim 1.

In regards to claim 17, the Examiner asserted Huang and Ferguson teach the metering apparatus as applied to claim 1 and then applies Jacobs to show the metering apparatus can communicate with an external device. The Examiner asserted “Jacobs discloses a parking metering with light emitting and infrared diodes for sending and receiving data through said face (Fig. 2:22,23,234). Jacobs further discloses a hand held computer used by the parking authority. One of the uses of the hand held computer is to communicate with the meter via the infrared transmitter in the officer’s hand held computer”.

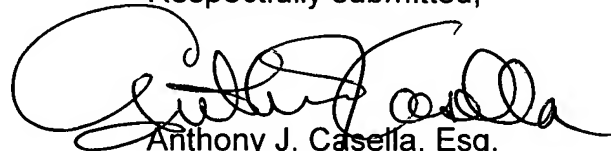
Claim 17 is directed to an electronic parking system including, inter alia, “an in-car parking meter having a first data transferring means and a display, said meter being disposed in an automobile such that said display can be viewed from a location external to said automobile, said first data transferring means includes a controllable segment of the display configured to allow light to pass through said display when the controllable segment is off and blocks light from passing through said display when the controllable segment is on and a reflector disposed behind the controllable segment of said display configured to reflect light back to a source external of the apparatus when the controllable segment is off, wherein upon light being directed at said reflector, the controllable segment is turned on and off to serially transmit status and parking-related data from said apparatus, and an external transceiver having a second data transferring means, said second data transferring means configured to communicate with said first transferring means of said in-car parking meter, said second data transferring means including a light point source and a photodetector which when directed toward said in-car parking meter serially receives said status and parking-related data from said in-car parking meter” (Emphasis added).

In addition to the same reasons as described above in relation to amended claim 1, Jacobs does not cure the deficiencies of Huang and Ferguson because Jacobs does not disclose a communication means as recited claim 17. Jacobs discloses a meter and external device which communicate by infrared communications (see col. 5, lines 4-14). As is known in the art, for infrared, or IR, communication, each device requires a transmit diode for transmitting data and a receive diode for receiving data, i.e., two active elements. In contrast, the system of claim 17 includes an in-car parking meter having “a

controllable segment of the display” and “a reflector disposed behind the controllable segment of said display configured to reflect light back to a source external of the apparatus when the controllable segment is off, wherein upon light being directed at said reflector, the controllable segment is turned on and off to serially transmit status and parking-related data from said apparatus, and an external transceiver having a second data transferring means, said second data transferring means configured to communicate with said first transferring means of said in-car parking meter, said second data transferring means including a light point source and a photodetector which when directed toward said in-car parking meter serially receives said status and parking-related data from said in-car parking meter”. The communication means of claim 17 does not communicate via infrared signals through the use of IR diodes as taught by Jacobs but communicates via reflected light (the source of the light being the external transceiver) from the in-car parking meter by turning the controllable segment on and off to allow the light to be reflected or not. It is respectfully submitted that amended Claim 17, along with dependent claims 19-25 and 29, is patentably distinct and not rendered obvious over Huang, Ferguson and Jacobs alone or in any combination and is believed to be in condition for allowance.

In view of the preceding amendment and remarks, it is submitted that the claims remaining in the application are directed to patentable subject matter, and allowance thereof is respectfully solicited. The Examiner is urged to contact applicant's attorney at the number below if the Examiner believes a telephone or personal interview would facilitate the prosecution of this application.

Respectfully submitted,



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